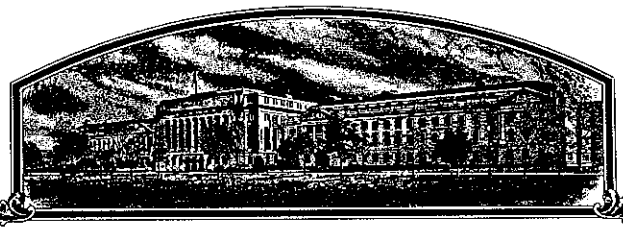
No. 8600092



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

DeKalb-Pfizer Genetics

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'4676A'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 31st *day of* December *in the year of our Lord one thousand nine hundred and* eighty-six.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3922

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
4676A	4676A	PV NUMBER 8600092
2. KIND NAME: Corn	3. GENUS AND SPECIES NAME: Zea Mays	FILING DATE: March 24, 1986 / TIME: 4:00 ~~A.M.~~ P.M.
4. FAMILY NAME (BOTANICAL): Gramineae	5. DATE OF DETERMINATION: 1979	FEE RECEIVED: $ 1800.00 / $ 200.00 / DATE: 3/24/86 / 11/5/86

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
DeKalb-Pfizer Genetics	3100 Sycamore Road DeKalb, IL 60115	815/756-3671

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
General Partnership		

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: * Waddell A. Biggart, Sughrue, Mion, Zinn, Macpeak & Seas, 1776 K St., NW, Washington, DC 20006 (202) 293-7060; Eric Christophersen, Esq., 3100Sycamore Rd., DeKalb, IL 60115; Dr. James H. Monroe, Legal Div., Pfizer Inc., 233 E. 42nd St., New York, NY 10017 (212) 573-2369

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.
- X 13E. Exhibit E, Statement regarding Ownership of Certificate

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [ ] YES [X] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?
[ ] YES [X] NO	[ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [ ] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

~~16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [ ] YES [ ] NO~~

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

March 20, 1986 — (DATE)

Thomas B Rice — (SIGNATURE OF APPLICANT)

Vice President, Director of Research

(DATE)

(SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

1

NOTE: * Please address all correspondence to W.A. Biggart, Esq., Washington, DC

Exhibit A.

8600092

ORIGIN AND BREEDING HISTORY
OF 4676A

The origin of 4676A is 1067-1x(B-line Composite). B-line Composite was a synthetic variety constructed by intermating about 35 cornbelt-adapted inbred lines. The cross, 1067-1x(B-line Composite), was made at Thomasboro, Illinois, during the summer of 1975. The subsequent breeding history was:

Year	Nursery	Row No.(s)	Location	Generation	Breeding Operation
1976	Winter	827	Homestead, FL	S0	Sib
1976	Disease	1032	Thomasboro, IL	S0#	Self
1977	Disease	406	Thomasboro, IL	S0#-S1	Self
1978	Winter	699	Homestead, FL	S0#-S2	Self
1978	Inbred	19-20	Thomasboro, IL	S0#-S3	Self
1979	Inbred	329-336	Thomasboro, IL	S0#-S4	Self

The S0#-S2 generation of the line emanated from a single selfed plant selected in the S0#-S1 generation. In the S0#-S2 generation, the line received the designation "4676A", and several uniform ears were selected from uniform selfed plants. In the S0#-S3 generation, several uniform ears were again selected from uniform selfed plants. In the S0#-S4 generation, after selection again for uniform plant and ear type, the uniformity of the line was judged to be adequate for production of commercial hybrids. Since the S0#-S4 generation, the line has been maintained by selfing accompanied by rogueing of off-type plants.

The original intermating and subsequent selections were all done by G. Richard Johnson or under his direction.

03310/2/002
DEKALB - PFIZER GENETICS

RECD JAN 1 3 1983

8600092

Applicant

1025 OAK ST
DEKALB IL 60115

4676A Exhibit A, Appendium I

TEST Date JANUARY 10, 1983

Test No. 411726

Lot No. 270120(TREATED)

Kind & Variety (Producers Declaration) 4676A

FOUNDATION ET1027 CORN F5

THIS SAMPLE MEETS CERTIFICATION REQUIREMENTS BASED ON SOURCE OF SEED, FIELD INSPECTION AND LABORATORY ANALYSIS

GERMINATION REPORT: 400 Seeds

Germination	97	%	Strong		%	Cold Test	%
Hard Seed		%	Pod & Stem Blight		%	A-A Test	%
Dead Seed	3	%	Other Diseases		%	Tetrazolium	%

PURITY REPORT:

Pure Seed		99.67	%	Test Weight	58.60LBS.
Weed Seeds		.00	%		
Other Crop Seeds		.00	%	Moisture	8.00%
Total Inert Matter		.33	%		
Broken Seed	.32		%	Total Weight of Sample Examined:	500.00
Other Inert	.01		%		

Dockage from 1,000 grams:

Noxious Weeds	Other Weed Seeds
NONE	NONE
Other Crop Seeds	**Inert Matter**
NONE	BROKEN SEED CHAFF

EMARKS:

This certifies that the sample of seed submitted of the lot designated above has been analyzed in accordance with the RULES FOR SEED TESTING AS ADOPTED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS. VIGOR TESTING INFORMATION CANNOT BE USED FOR LABELING PURPOSES.

ILLINOIS CROP IMPROVEMENT ASSOCIATION, INC.
508 South Broadway, Urbana, Illinois 61801
Telephone: 217-367-4053

Registered Seed Technologist

James R. Sherl 3
Manager

M 3-0881

JANUARY 10, 1983

03310/4/002

Applicant DEKALB - PFIZER GENETICS

8600092

1025 OAK ST
DEKALB IL 60115

4676A Exhibit A, Appendium I

TEST Date JANUARY 16, 1985

Test No. 410122 4676A Lot No. 21N176,UNTD

Kind & Variety (Producers Declaration)

FOUNDATION EF1027 CORN F5

THIS SAMPLE MEETS CERTIFICATION REQUIREMENTS BASED ON SOURCE OF SEED, FIELD INSPECTION AND LABORATORY ANALYSIS

GERMINATION REPORT:

Germination	%			Cold Test	%
Hard Seed	%	Pod & Stem Blight	%	A-A Test	%
Dead Seed	%	Other Diseases	%	Tetrazolium	%

PURITY REPORT:

Pure Seed		99.99	%	Test Weight	65.80LBS.
Weed Seeds		.00	%		
Other Crop Seeds		.00	%	Moisture	12.40%
Total Inert Matter		.01	%		
Broken Seed	.00		%	Total Weight of Sample Examined:	500.00
Other Inert	.01		%		

Dockage from 1,000 grams:

Noxious Weeds	Other Weed Seeds
NONE FOUND	NONE FOUND
Other Crop Seeds	**Inert Matter**
NONE FOUND	CHAFF

REMARKS:

This certifies that the sample of seed submitted of the lot designated above has been analyzed in accordance with the RULES FOR SEED TESTING AS ADOPTED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS. VIGOR TESTING INFORMATION CANNOT BE USED FOR LABELING PURPOSES.

ILLINOIS CROP IMPROVEMENT ASSOCIATION, INC.
508 South Broadway, Urbana, Illinois 61801
Telephone: 217-367-4053

Registered Seed Technologist

James R. Shenk
Manager

4

RM 3-1084

JANUARY 18, 1985

RECD FEB 14 1985

Exhibit B. Novelty Statement

4676A is yellow corn inbred line derived from a single cross (1067-1 x B-line composite).
The public line that is most similar to 4676A is A632. 4676A is significantly different from A632 in plant height (222 vs 193), ear height (77 vs 91) and length of top ear internode (17 vs 11). However, there are no significant differences in ear length (14 vs 14) and ear diameter (39 vs 38). (See Exhibit B, Appendium II).

4676A

Exhibit B. Novelty Statement

Appendium I.

4676A vs. A632

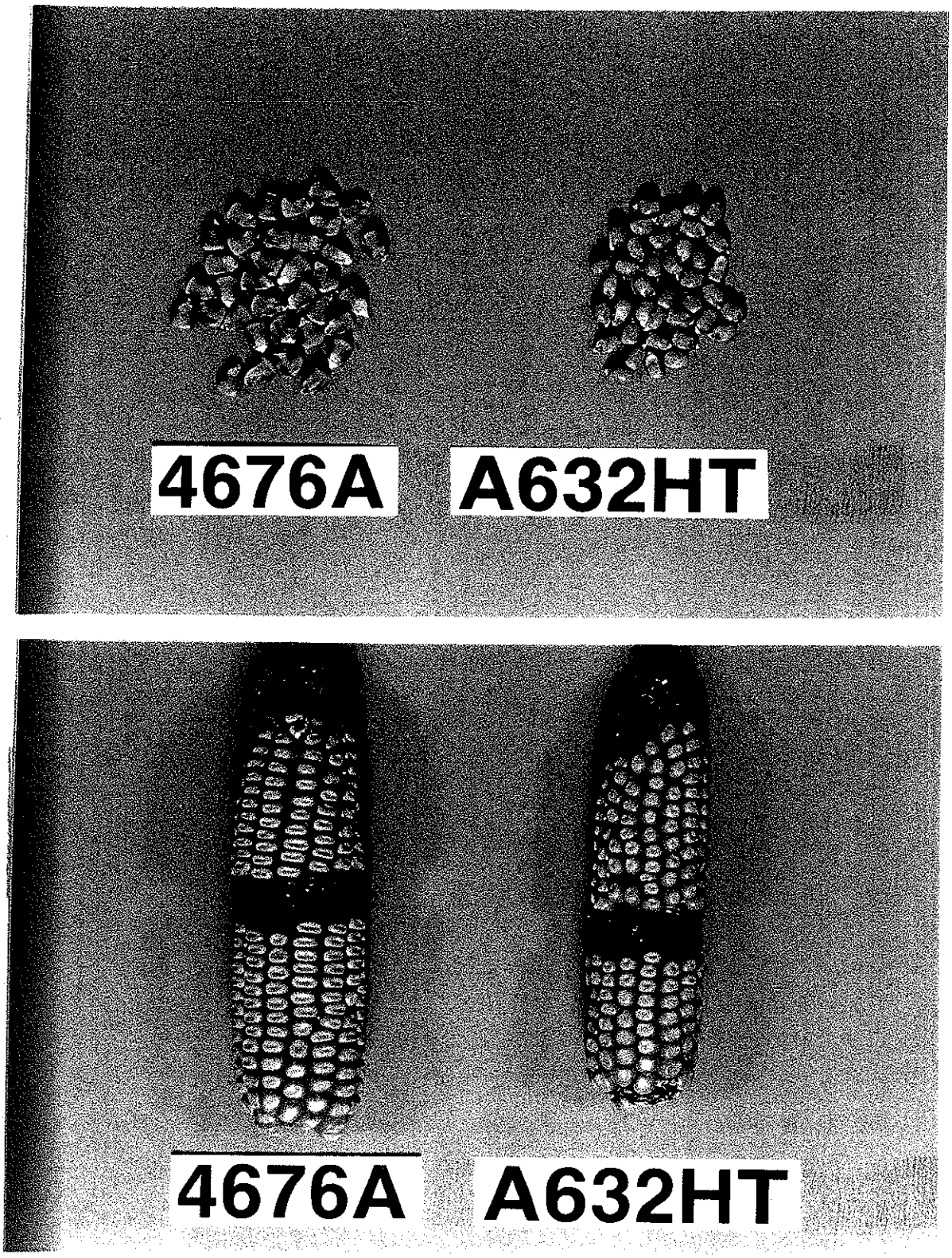
Plant & Ear Characteristics	4676A	A632	Testing Hypothesis $H_o: \mu_1 = \mu_2$ $H_A: \mu_2 \neq \mu_2$
1. Plant height (cm)	222	193	Sig (α = 0.1)
2. Ear height (cm)	77	91	Sig (α = 0.1)
3. Length of top ear internode (cm)	17	11	Sig (α = 0.1)
4. Ear length (cm)	14	14	Not Sig (α = 0.1)
5. Ear diameter (mm)	39	38	Not Sig (α = 0.1)
6. Ear weight (gm)	85	81	Not Sig (α = 0.1)

1) $n_1 \neq n_2$

2) Detailed calculations are available.

8600092

13B. Exhibit B Novelty Statement, Appendium II.



4676A and A632Ht have a dent kernel. The cob color of 4676A and A632Ht is red. However, the ear weight of 4676A is significantly heavier than A632Ht and kernels of 4676A is much larger, flatter than A632Ht.

4676A

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-28
(2-15-74)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Corn)

4676A

OBJECTIVE DESCRIPTION OF VARIETY

CORN *(ZEA MAYS)*

NAME OF APPLICANT(S)

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*

FOR OFFICIAL USE ONLY

PVPO NUMBER 8600092

VARIETY NAME OR TEMPORARY DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. TYPE:

[2] 1 = SWEET 2 = DENT 3 = FLINT 4 = FLOUR 5 = POP 6 = ORNAMENTAL

2. REGION WHERE BEST ADAPTED IN THE U.S.A.:

[2] 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST
5 = SOUTHCENTRAL 6 = SOUTHWEST 7 = MOST REGIONS

3. MATURITY (In Region of Best Adaptability):

(Under "omments" (pg. 3) state how heat units were calculated)

[8][2]	DAYS FROM EMERGENCE TO 50% OF PLANTS IN SILK	[1][3][2][5] HEAT UNITS
[ ][ ]	DAYS FROM 50% SILK TO OPTIMUM EDIBLE QUALITY	[ ][ ][ ][ ] HEAT UNITS
[5][5]	DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE	[1][3][1][9] HEAT UNITS

4. PLANT:

[2][2][2] CM. HEIGHT (To tassel tip)

[ ][7][7] CM. EAR HEIGHT (To base of top ear)

[1][7] CM. LENGTH OF TOP EAR INTERNODE

Number of Tillers:

[1] 1 = NONE 2 = 1–2 3 = 2–3 4 = > 3

Number of Ears Per Stalk:

[3] 1 = SINGLE 2 = SLIGHT TWO-EAR TENDENCY
3 = STRONG TWO-EAR TENDENCY 4 = THREE-EAR TENDENCY

Cytoplasm Type:

[1] 1 = NORMAL 2 = "T" 3 = "S" 4 = "C" 5 = OTHER (Specify) _____

5. LEAF (Field Corn Inbred Examples Given):

Color:

[3] 1 = LIGHT GREEN (HY) 2 = MEDIUM GREEN (WF9) 3 = DARK GREEN (B14) 4 = VERY DARK GREEN (K166)

Angle from Stalk (Upper half):

[2] 1 = < 30° 2 = 30–60° 3 = > 60°

Sheath Pubscence:

[1] 1 = LIGHT (W22) 2 = MEDIUM (WF9) 3 = HEAVY (OH26)

Marginal Waves:

[2] 1 = NONE (HY) 2 = FEW (WF9) 3 = MANY (OH7L)

Longitudinal Creases:

[2] 1 = ABSENT (OH51) 2 = FEW (OH56A) 3 = MANY (PA11)

Width:

[0][8] CM. WIDEST POINT OF EAR NODE LEAF

Length:

[0][8][4] CM. EAR NODE LEAF

[1][9] NUMBER OF LEAVES PER MATURE PLANT

8

8600092

6. TASSEL:

[0 3] NUMBER OF LATERAL BRANCHES

Branch Angle from Central Spike:

[1] 1 = < 30° 2 = 30–40° 3 = > 45°

Peduncle Length:

[0 7] CM. FROM TOP LEAF TO BASAL BRANCHES

Pollen Shed:

[2] 1 = LIGHT (WF9) 2 = MEDIUM 3 = HEAVY(KY21)

[4] **Anther Color:** [5] **Glume Color:** 1 = YELLOW 2 = PINK 3 = RED 4 = PURPLE 5 = GREEN 6 = OTHER (Specify) _____

Pollen Restoration for Cytoplasms (o = Not Tested, 1 = Partial, 2 = Good)

[ ] "T" [ ] "S" [ ] "C" [X] OTHER (Specify Cytoplasm and degrees of restoration) Not Tested

7. EAR (Husked Ear Data Except When Stated Otherwise):

[1 4] CM LENGTH [3 9] MM. MID-POINT DIAMETER [8 5] GM. WEIGHT

Kernel Rows:

[2] 1 = INDISTINCT 2 = DISTINCT [1 4] NUMBER

[2] 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = SPIRAL

Silk Color (Exposed at Silking Stage):

[5] 1 = GREEN 2 = PINK 3 = SALMON 4 = RED 5=purple

Husk Color:

[2] FRESH [6] DRY 1 = LIGHT GREEN 2 = DARK GREEN 3 = PINK 4 = RED 5 = PURPLE 6 = BUFF

Husk Extention: (Harvest Stage)

[3] 1 = SHORT (Ears Exposed) 2 = MEDIUM (Barely Covering Ear) 3 = LONG (8–10CM Beyond Ear Tip) 4 = VERY LONG (> 10 CM)

Husk Leaf:

[1] 1 = SHORT (< 8 CM) 2 = MEDIUM (8–15 CM) 3 = LONG (> 15 CM)

Shank:

[1 3] CM LONG [8] NO. OF INTERNODES

Position at Dry Husk Stage:

[1] 1 = UPRIGHT 2 = HORIZONTAL 3 = PENDENT

Taper:

[1] 1 = SLIGHT 2 = AVERAGE 3 = EXTREME

Drying Time (Unhusked Ear):

[ ] 1 = SLOW 2 = AVERAGE 3 = FAST

8. KERNEL (Dried):

Size (From Ear Mid-Point):

[1 0] MM LONG [0 9] MM. WIDE [0 6] MM. THICK

Shape Grade (% Rounds)

[4] 1 = < 20 2 = 20–40 3 = 40–60 4 = 60–80 5 = > 80

8. KERNEL (Dried) :

[1] **Pericarp Color:** 1 = COLORLESS 2 = RED-WHITE 3 = TAN 4 = BRONZE 5 = BROWN 6 = LIGHT RED 7 = CHERRY RED 8 = VARIEGATED (Describe) _____

[1] **Aleurone Color:** 1 = HOMOZYGOUS 2 = SEGREGATING (Describe) _____

[1] 1 = WHITE 2 = PINK 3 = TAN 4 = BROWN 5 = BRONZE 6 = RED 7 = PURPLE 8 = PALE PURPLE 9 = VARIEGATED (Describe) _____

[3] **Endosperm Color:** 1 = WHITE 2 = PALE YELLOW 3 = YELLOW 4 = PINK-ORANGE 5 = WHITE CAP.

Endosperm Type:

[3] 1 = SWEET (su1) 2 = EXTRA SWEET (sh2) 3 = NORMAL STARCH 4 = HIGH AMYLOSE STARCH 5 = WAXY STARCH 6 = HIGH PROTEIN 7 = HIGH LYSINE 8 = OTHER (Specify) _____

[2][7] GM. WEIGHT /100 SEEDS (Unsized Sample)

9. COB:

[2][3] MM. DIAMETER AT MID-POINT

Strength:

[2] 1 = WEAK 2 = STRONG

Color:

[3] 1 = WHITE 2 = PINK 3 = RED 4 = BROWN 5 = VARIEGATED 6 OTHER (Specify) _____

10. DISEASE RESISTANCE (O = Not Tested, 1 = Susceptible, 2 = Resistant):

[0]	STALK ROT (Diplodia)	[0]	STALK ROT (Fusarium)	[0]	STALK ROT (Gibberella)
[2]	NORTHERN LEAF BLIGHT	[2]	SOUTHERN LEAF BLIGHT	[0]	SMUT
[0]	SOUTHERN RUST	[0]	CORN SMUT	[0]	BACTERIAL WILT
[0]	BACTERIAL LEAF BLIGHT	[0]	MAIZE DWARF MOSAIC	[0]	STUNT
[ ]	OTHER (Specify) Anthracnose (foliar phase)-2; Eyespot-2				

11. INSECT RESISTANCT (O = Not Tested, 1 = Susceptible, 2 = Resistant):

[2]	CORNBORER	[0]	EARWORM	[0]	SAPBEETLE	[0]	APHID
[0]	ROOTWORM (Northern)	[0]	ROOTWORM (Western)				
[0]	ROOTWORM (Southern)	[ ]	OTHER (Specify) _____				

12. VARIETIES MOST CLOSELY RESEMBLING THAT SUBMITTED FOR THE CHARACTERS GIVEN:

CHARACTER	VARIETY	CHARACTER	VARIETY
Maturity	A632Ht	Kernel Type	
Plant Type	A632Ht	Quality (Edible)	
Ear Type		Usage	

REFERENCES:

U.S. Department Agriculture. Yearbook 1937.

Corn: Culture, Processing, Products. 1970 Avi Publishing Company, Westport, Connecticut. (Numerous (Authors)

Emerson, R.A., G.W. Beadle, and A.C. Fraser. A Summary of Linkage Studies in Maize. Cornell A.E.S., Mem. 180. 1935.

The Mutants of Maize. 1968. Crop Science Society of America. Madison, Wisconsin.

Stringfield, G.H. Maize Inbred Lines of Ohio. Ohio A.E.S. Bul. 831. 1959.

Butler, D.R. 1954 – A System for the Classification of Corn Inbred Lines – PhD. Thesis, Ohio State University.

COMMENTS: Heat Unit Calculations:

$$GDD = \frac{\text{Daily max. temp } (\leq 86°F) + \text{Daily min. temp } (\geq 50°F)}{2} - 50°F$$

Exhibit D.

Additional Description of the Variety.

The isozyme analysis of 4676A and A632Ht shows genetic differences at 3 different loci: Acph - 2 vs 4, MDH B - 3.5 vs 6, and PHI - 4 vs 5. (See Exhibit D, Appendium I)

Exhibit D.

Additional Description of the Variety.

Appendium I.

Isozyme Genotypes of Selected DEKALB Parents

	Alleles Present	
LOCUS	4676A	A632Ht
# of plants assayed	6	6
ACPH	2	4
ADH	4	4
Cat	9	9
EP	6	6
GOT U	4	4
GOT M	4	4
GOT L	4	4
B-Glu	7	7
IDH A	4	4
IDH B	6	6
MDH A	6*	6*
MDH B	3.5	6
MDH C	16	16
MDH D	12	12
MDH E	12	12
PGM A	9	9
PGM B	4	4
PHI	4	5

*Allele is probably 6 but null cannot be ruled out.

The technique of using isozymes for gemotyping or "fingerprinting" is described by the following reference:

Goodman, M. M. and C. W. Stuber. 1980
Genetic identification of lines and crosses using isoenzyme electrophoresis. Proceedings of the Thirty-fifth Annual Corn and Sorghum Industry Research Conference.

LAW OFFICES
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1776 K STREET, N.W.
WASHINGTON, D.C. 20006-2359

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DONALD E. ZINN, P.C.
THOMAS J. MACPEAK, P.C.
ROBERT J. SEAS, JR., P.C.
DARRYL MEXIC, P.C.
ROBERT V. SLOAN, P.C.*
PETER D. OLEXY, P.C.
J. FRANK OSHA
WADDELL A. BIGGART, P.C.
ROBERT G. McMORROW, P.C.
LOUIS GUBINSKY, P.C.
NEIL B. SIEGEL
DAVID J. CUSHING
CYNTHIA CLARKE DALE
JOHN R. INGE#
JOSEPH J. RUCH, JR.°
JOHN K. DONAGHY△
RICHARD C. TURNER
KENNETH J. BURCHFIEL
CHARLES S. P. GUENZER
GORDON KIT
SUSAN M. JOVANOVICH
FRANK L. BERNSTEIN
MARK D. KULLER
MARK BOLAND°
DAVID L. HOFFMAN°

OF COUNSEL
SHELDON I. LANDSMAN, P.C.
HOWARD L. BERNSTEIN, P.C.
ALAN J. KASPER

*MD; #MA; △VA; °PA, VA; °PA

March 24, 1986

8600092

EXHIBIT E

Plant Variety Protection Office
United States Department of Agriculture
AMS-USDA
Room 500 -- National Agricultural
Library Building
Beltsville, MD 20705

Re: Plant Variety Protection
Certificate Application
Hybrid Inbred Corn Line 4676A
DPG 8507C

Dear Sirs:

Mr. G. Richard Johnson, breeder of corn line 4676A, was from 1975 through July 14, 1982, a full-time employee of DeKalb AgResearch, Inc. DeKalb-Pfizer Genetics, a general partnership between DeKalb AgResearch, Inc. and Pfizer Genetics, Inc., succeeded on July 15, 1982, to substantially all of the assets of DeKalb AgResearch, Inc., including all of the rights to 4676A. From July 15, 1982, to the present, Mr. Johnson has been a full-time employee of DeKalb-Pfizer Genetics.

Very truly yours,

Waddell A. Biggart

Waddell A. Biggart

WAB/cmg